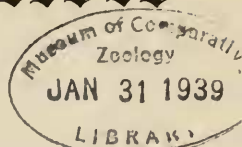


The Entomologist's Record

AND

13,820

Journal of Variation



VOL. LI.

JANUARY 15, 1939.

No. 1

VARIATION IN THE WING MARKINGS OF THE TRYPETID FLY, *EURIBIA (UROPHORA) STYLATA*, F.

By H. W. ANDREWS, F.R.E.S.

Plate I.

It is well known to Dipterists that certain species of Trypetids show considerable variation in their wing-markings.* *Euribia stylata*, F. is one such species, and from specimens in my collection added to a long series bred this year (1938) from galled seed-heads of the Spear Thistle (*Unicus lanceolatus*) I have attempted to work out the main lines of its variation. The wing-markings of *E. stylata* as given in Wingate ("Durham Diptera") are:—"Wings with only three bands, the basal band absent: the X5² band (my sub-apical) and the tip band united at the fore-margin." Seguy ("Muscides acalyptères") says:—"Three dark transverse bands: bands reduced: the two apical joined at the edge." He adds in his detailed description: "Wings clear with three brown bands: the two apical sometimes separated at the edge in the males." Hendel (in "Lindner's Palaearctic Diptera") says:—"Wings with only three dark cross-bands, of which the first spreads out at the tip as a stripe. The basal band at most is vestigial . . . third and fourth (my sub-apical and apical) more or less broadly joined at the costal margin. Stigma (Cse) always dark brown."

I may mention here that the word "band" in descriptions of Trypetid wing-markings does not imply that it extends right across the wing; in the case of *E. stylata* only one of the three (my sub-apical) extends normally right across.

The above brief descriptions may be amplified as follows:—

(1) *The Apical Band* consists of a darkened area at the wing tip, starting at a point on the costal margin above the outer cross-vein (t-p) and extending down as a rule to the third longitudinal or radial vein (r 4+5), but at the outer margin extending further down to a little below the fourth longitudinal or median vein (m 1+2).

Variation.—This band is very constant at the outer margin but it varies in depth along the costa, thinning out until in rare cases only a costal rim is left (Fig. K).

(2) *The Sub-apical Band* extends normally right across the wing: it merges with the apical band at the costal margin, and this junction of the two bands is one of the characters that differentiates *E. stylata* from *E. affinis*, Frauenfeld, where the two apical bands are described as "widely separated."

*Vide *E. Record*, Vol. XXVII, p. 57. "Variation in the Wing-markings of *Tephritis (Oxyina) flavipennis*, Lw. J. E. Collin. (With plate)."

Variation.—The constant feature in this band is its coincidence with the outer cross-vein (t-p), it continues upwards in varying degrees of thickness to its junction with the apical band, and in extreme cases it practically fades out above the outer cross vein (Fig. I). In Group C, where the clear spot has extended laterally this band does not quite reach the costal margin, nor does it always do so in Form D. (Fig. D1).

A study of the material in my possession (73 ♂♂ and 54 ♀♀) as regards the apical and sub-apical bands shows a wide range of transitional forms merging one into another, which can be divided into four main groups A-D applicable to both sexes.

Group A, ♂♂ 49%, ♀♀ 48%. The typical form with apical and sub-apical bands joined at costal margin (Fig. A 1 and 2).

Group B, ♂♂ 17%, ♀♀ 22%, varying from Group A by the presence of a small or large clear spot at the junction of the apical and sub-apical bands (Fig. B 1 and 2). This spot may be only just visible or so large that it merges into the next group. This is the form that is figured in Loew's "Bohrfleigen."

Group C, ♂♂ 21%, ♀♀ 11%. The clear spot by enlargement merges laterally into the clear area of the wing. (Fig. C 1 and 2).

Group D, ♂♂ 10%, ♀♀ 18%. In this form the sub-apical band is separated from the apical band, the clear spot expanding vertically up to the costal margin and down into the clear area of the wing. (Fig. D 1 and 2).

In all four groups the intensity of colouring in the wing bands varies also, from dark black-brown to light smoke colour.

(3) *The Median Band*: starts from the apical end of the stigma and coincides with the inner cross-vein (t-a), where as a rule it ends.

Variation.—This is the most variable of the wing bands, the only constant feature being the stigmatic spot and the clouding of the inner cross-vein, though in extreme forms even one or other of these may be absent (Figs. G and H). In its most usual form (♂♂ 41% and ♀♀ 64% of those examined) it consists of two spots, one at the apex of the stigma and the other coinciding with the inner cross-vein. These spots may be united or separated and vary both in size and intensity of colour (Figs. A 1 and 2, C 2, and E 2). In 16% of the ♂♂ and 11% of the ♀♀ the band reached below the fourth longitudinal vein (m 1+2) (Fig. B 1). In a few cases there was a faint spot on the lower margin of the wing (Figs. E 2 and C 2), and very rarely the band reached right across the wing (var. *venabulata*, Rondani) (Figs. F 1 and 2 and Fig. J).

(4) *No Basal Band*. The absence of this band differentiates *E. stylata* from *E. solstitialis*, L., *E. cuspidata*, Mg., and *E. jaceana*, Hering.

Both sexes are equally variable and the transitional forms, as I have said, merge gradually one into another and vary among themselves in the shape and density of colouring of their wing bands; but when a long series is studied it can usually be divided as above, although occasional unsymmetrical specimens occur with the two wings showing markings of different groups.

E. stylata is one of our commoner Trypetids and can easily be bred from the galled heads of the spear-thistle; it has also been bred by Mr Niblett from galled heads of the musk-thistle (*Carduus nutans*).

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EXPLANATION OF PLATE.

Figs. A to F: see text.

Figs. G to K: extreme forms.

G. Median band reduced to inner cross-vein only.

H. Median band reduced to stigma only.

I. General reduction of apical and sub-apical bands.

J. General intensification of all bands.

(=var. *venabulata*, Rondani).

K. Apical band reduced on costal margin.

Magnification $\times 5$.

Right-hand figures, A 2 - F 2, taken from female specimens.

Left-hand figures, A 1 - F 1, taken from male specimens.

I have to thank Messrs V. Siviter Smith & Co., Ltd., for the considerable trouble they have taken to obtain a satisfactory plate.

 NOTES ON PYRAUSTA NUBILALIS, HUBN.

By S. WAKELY.

As far as Britain is concerned *Pyrausta nubilalis* has always been considered to be a casual immigrant. It is, therefore, of interest to record the discovery of a small colony of this species established at Benfleet, Essex.

A single specimen of the moth, taken by myself at Benfleet on 10th July, was identified by Mr H. C. Huggins (*Entom.*, lxxi, p. 241). It was a female, and I obtained ova. During the next fortnight Mr Huggins visited the locality and was lucky enough to take about a dozen specimens, mostly rather worn. On 24th July I managed to get down to Benfleet again, accompanied by Mr L. T. Ford, and was able to net one more specimen—taken a few minutes before having to hurry away to catch the train home. This was another female and, as Mr Ford had a convenient plant of hop growing in his garden, I passed it on to him. He obtained several batches of ova, and I also sent him the ova laid by my first capture. Regarding foodplants, Meyrick mentions only hop and hemp.

Mr Ford wrote to me later and said the ova had hatched and the young larvae were thriving on the hop stems, into which they burrowed. The stems were changed as required, and as the larvae got larger the heaps of frass and material excavated by the larvae were very noticeable.

On 8th October Mr Ford and I again visited Benfleet, and spent a day collecting larvae of various species of Lepidoptera in seed-heads and stems on the salterns and along the sea-wall. Returning to the Station in the late afternoon, we found there was nearly an hour to wait for a train, so we decided to visit the locality where the *nubilalis* were taken and look for the larva. Mr Ford was lucky in finding a larva almost at once in a stem of *Artemisia vulgaris*, among clumps of which the moths had been taken. It was identical with those he had at home feeding on hop, so we set to work and found about a dozen each in the few minutes at our disposal. A few weeks later we collected some more. They were not really common, but enough were found to show that it was a thriving little colony. A broken stem was the best guide to locating the larvae. The stem frequently snaps at the hole made by the larva where it enters the stem. This spot was